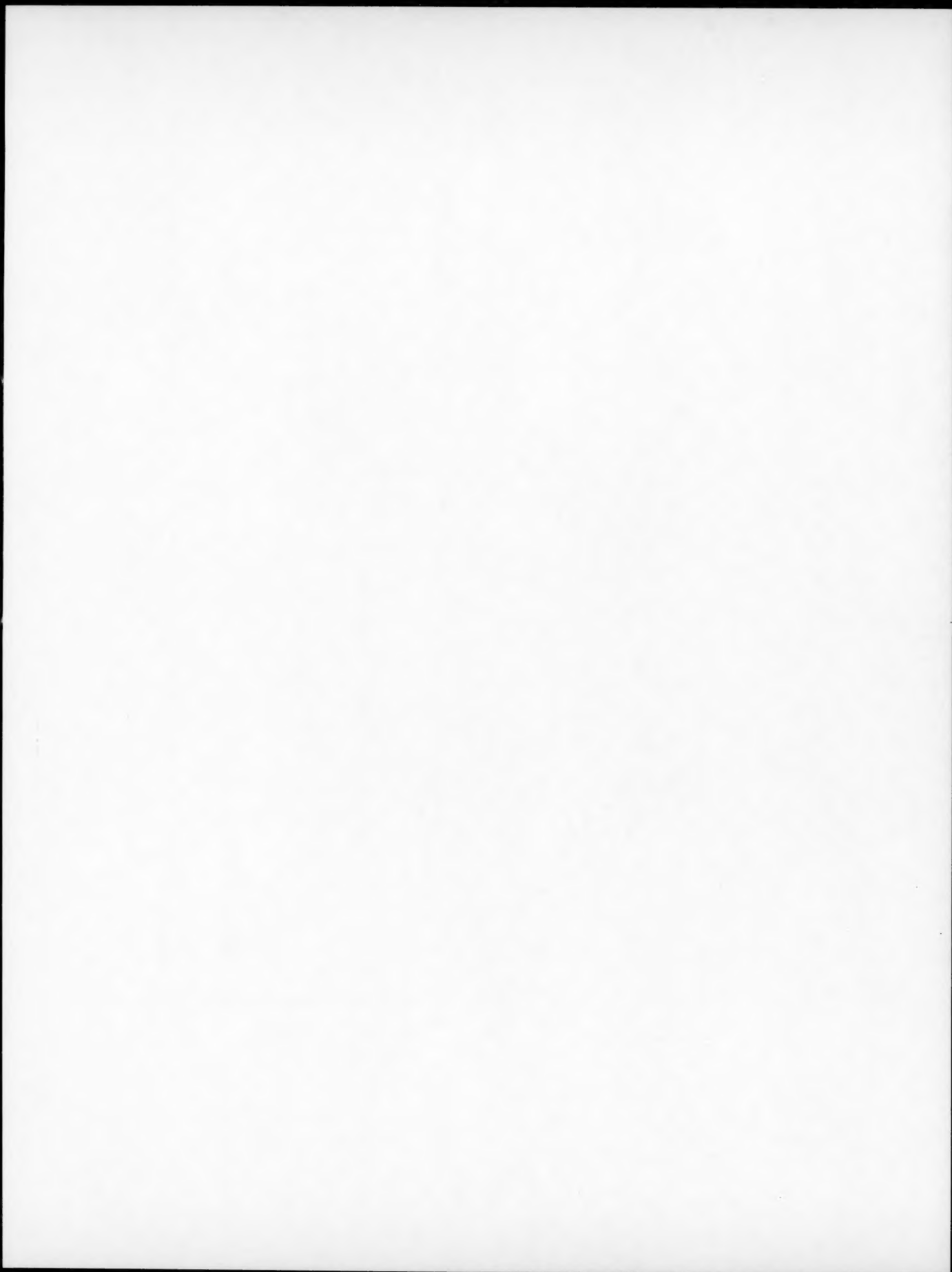


**INDEX**

**SOVIET RADIOCHEMISTRY**  
**Volume 16, Numbers 1-6, 1974**



SOVIET RADIOCHEMISTRY  
Volume 16, Numbers 1-6, 1974

(A translation of Radiokhimiya)

A

Abakumov, A. S.—396, 400, 856  
Abdulaev, D.—635  
Ablesimov, N. E.—895  
Abrosimov, V. K.—128  
Afanas'ev, Yu. A.—200, 244  
Aikhler, V.—709  
Akulov, G. P.—289  
Alekseeva, D. P.—538, 816, 823  
Alekseeva, N. A.—566  
Al'terman, E. I.—527  
Andreev, V. P.—263  
Andreeva, N. R.—108  
Andreichuk, N. N.—583  
Andrianov, M. A.—632  
Andronov, B. V.—89  
Andronov, B. V.—89  
Andryushin, V. G.—131, 390, 411  
Anikin, V. I.—22, 120  
Antraptseva, I. F.—890  
Artyukhin, P. I.—204  
Aslanishvili, N. A.—799  
Avvakumov, E. G.—143

B

Baklanova, P. F.—495, 838  
Barbanel', Yu. A.—221, 867  
Baru, V. G.—890  
Bashkanova, V. N.—143  
Basov, A. S.—269  
Batasheva, V. V.—890  
Bayar, B.—333, 339, 345, 871, 877  
Beletskii, P. N.—890  
Belov, V. Z.—709  
Belyaev, Yu. I.—735, 829  
Berdonosova, D. G.—302  
Berezyuk, V. G.—269  
Bevz, A. S.—832  
Blokhn, N. B.—356, 543, 782  
Bondarevskii, S. I.—895  
Borovinskii, V. A.—320  
Brezhneva, N. E.—34, 41, 587  
Brodskaia, G. A.—886  
Broshkevich, R.—282

Buchikhin, E. P.—623, 626  
Bulyanitsa, L. S.—566  
Busev, A. I.—255  
Byr'ko, V. M.—255

C

Chaikhovskii, A. A.—829  
Chebotarev, N. T.—632  
Chemorukov, N. G.—409  
Chernova, N. A.—614  
Chernyavskaya, N. B.—108, 111  
Chirkst, D. E.—53, 56, 168, 369  
Chistyakov, V. M.—545, 735, 793  
Chmutova, M. K.—689  
Chmutova, Yu. A.—689  
Chuburkov, Yu. T.—517, 808  
Chuburkova, I. I.—808  
Chudinov, E. G.—16, 195, 722  
Chudnovskaya, G. P.—867  
Chumachkova, V. D.—540

D

Danilin, L. D.—217  
Denisov, D. A.—675  
Dunaeva, K. M.—540  
Dziomko, V. M.—447, 452, 579

E

Efremov, Yu. V.—263  
Egorov, Yu. V.—552  
Elesin, A. A.—62, 758  
Elizarova, A. N.—527  
Ermakov, V. A.—356, 543, 545, 793  
Ershova, Z. V.—247, 396, 400, 856  
Evseeva, N. K.—447, 452, 579  
Evtyukhova, O. V.—269

F

Fedoezzhina, R. P.—623, 626  
Fedorov, F. P.—882  
Filatov, E. S.—618  
Filatova, L. N.—591  
Filippov, A. P.—182

Flerov, G. N.—657  
Fominykh, V. E.—114, 531  
Frenkel', V. Ya.—803  
Frolov, A. A.—548, 561, 786  
Frolov, Yu. G.—438

G

Gabov, N. I.—416  
Galochkina, G. V.—591  
Ganyaev, V. P.—324  
Garbauskas, G. K.—133  
Gal'tsova, E. A.—123  
Gavshanovich, A. Ya.—863  
Gavrilov, V. V.—414  
Gindin, L. M.—204  
Goncharova, L. K.—312  
Gorbenko, F. P.—258  
Gorshtein, G. I.—419  
Grebenshchikova, V. I.—111  
Gromov, V. V.—316, 403, 635, 742  
Gureev, E. S.—535, 886  
Guseva, N. N.—500

I

Illarionov, V. V.—329  
Iofa, B. Z.—555  
Iokhel'son, S. B.—273, 277, 280  
Ippolitova, E. A.—540  
Ishutin, V. V.—136  
Iskanderova, A. D.—266  
Islamcy, T.—535  
Isupov, V. K.—414  
Ivanov, L. N.—403  
Ivanov, O. V.—447, 452, 579  
Ivanovich, N. A.—758

K

Kodis, R. L.—329  
Kaminskaya, L. K.—123  
Kanevskii, E. A.—407, 457, 462, 465, 623, 626  
Kapshininov, Yu. I.—587  
Kapshukov, I. I.—735, 832, 838, 842, 846  
Kapustin, O. A.—601, 607  
Karantsevich, T. S.—126

Karapet'yants, M. Kh.—500  
 Kavaseva, V. A.—758  
 Kashcheev, I. N.—550, 630  
 Kasimov, F. D.—252  
 Katyashchuk, I. V.—96  
 Kazak, V. G.—117  
 Kazas, T. S.—208  
 Khalturin, G. V.—320  
 Kharitonov, Yu. Ya.—177, 237, 240  
 Khusidman, M. B.—893  
 Kirin, I. S.—414, 895  
 Kochetkova, N. E.—689  
 Kolmakova, A. I.—352  
 Koltunov, V. S.—67, 73, 77, 83, 190, 479, 485, 489  
 Kolysh, A. V.—1  
 Komarov, E. V.—48  
 Konkina, L. F.—59  
 Konkina, L. F.—382  
 Kordyukovich, V. O.—352  
 Koroleva, T. I.—244  
 Korotkin, Yu. S.—376, 709  
 Korpusov, G. V.—34, 41, 683  
 Korsakov, M. V.—289, 557  
 Korshunov, I. A.—767, 711, 775, 778  
 Koshcheeva, I. Ya.—173  
 Kostin, A. P.—143  
 Kosyakov, V. N.—722  
 Koflin, V. P.—867  
 Koval'skaya, M. P.—566  
 Kovba, L. M.—285, 638  
 Kovenya, S. V.—522  
 Kovtun, N. P.—255  
 Kozhevnikov, P. B.—131, 411  
 Kozhina, I. I.—53, 168, 361, 369  
 Kozlovskaya-Mil'ner, E.—282  
 Krasnov, K. S.—208  
 Kremenskaya, I. N.—447, 452  
 Kremenskaya, I. N.—579  
 Krot, N. N.—538, 799  
 Kryukova, A. I.—1, 775, 778  
 Kulikov, N. F.—139  
 Kumaneva, G. A.—447, 452, 579  
 Kuptsova, V. V.—552  
 Kuznetsov, G. I.—252, 683  
 Kuznetsov, L. M.—859  
 Kuznetsov, Yu. V.—527  
 Kuznetsova, V. V.—762  
 Kwan, T.—403  
 Kysel, O.—597

## L

Lanin, V. P.—425, 429  
 Lanskaya, N. G.—260  
 Lapitskaya, E. V.—258  
 Laskorin, B. N.—320, 229

Lavut, E. G.—540  
 Lazarev, L. N.—89  
 Lebedev, I. A.—803  
 Lebedev, L. M.—517, 808  
 Legin, V. K.—527  
 Leonov, V. V.—557  
 Levchenkov, O. A.—266  
 Lindval', R. V.—762  
 Lishkareva, N. I.—258  
 Lizhkina, G. S.—386  
 Lukoyanov, V. M.—632  
 Lunger, B. A.—535  
 Lunichkina, K. P.—28

## M

Makedonskaya, A. I.—808  
 Makhalov, E. M.—739  
 Mamaev, L. A.—120, 675  
 Marchenko, V. I.—77, 479, 485, 489  
 Markov, G. S.—699  
 Markov, G. S.—882  
 Marochkina, L. Ya.—204  
 Martynov, B. V.—22  
 Martynov, B. V.—120  
 Martynov, B. V.—675  
 Mashirov, L. G.—704  
 Maslov, O. D.—808  
 Matuzenko, M. Yu.—829  
 Mazalov, L. N.—123  
 Mefod'eva, M. P.—799  
 Mekhedov, B. N.—136  
 Melikhov, I. V.—295, 302, 305  
 Mezhav, E. A.—126  
 Mezhov, E. A.—250  
 Mikhailichenko, A. I.—500  
 Mikheev, N. B.—644, 667  
 Mikshevich, N. V.—552  
 Mokrousov, A. D.—793  
 Morozova, R. P.—173  
 Moskvichev, E. P.—409  
 Moskvina, A. I.—177  
 Moskvina, A. I.—237  
 Moskvina, A. I.—240  
 Murav'eva, I. A.—638  
 Murav'eva, L. P.—221  
 Murinov, Yu. I.—123  
 Musakin, A. P.—329  
 Myakishev, K. G.—143  
 Myasoedov, B. F.—312, 689, 716, 803, 851  
 Myasoedov, N. F.—898

## N

Navrotskaya, V. A.—214  
 Nazarova, I. I.—62  
 Nefedov, V. D.—289  
 Nekrasova, V. V.—851

Nesmeyanov, An. N.—618, 653  
 Nikashina, V. A.—739  
 Nikiforov, A. F.—269  
 Nikipelov, B. V.—442  
 Nikitin, Yu. E.—123  
 Nikityuk, L. N.—104  
 Nikolaevskii, V. B.—813  
 Nikolotova, Z. I.—675  
 Nikol'skaya, L. E.—470, 475  
 Nikol'skii, B. P.—699  
 Novak, Z.—282  
 Novgorodov, A. F.—333, 339, 345, 871, 877  
 Novikov, A. I.—312, 746, 750, 755  
 Novikov, Yu. P.—229  
 Novoselov, G. P.—550, 630

## O

Oblivantsev, A. N.—139  
 Organesyan, Yu. Ts.—657  
 Orlova, A. S.—638  
 Orlova, M. M.—538  
 Os'kina, T. E.—614, 640

## P

Pakholkov, V. S.—324  
 Pakhamov, B. G.—302  
 Pal'shin, E. S.—851  
 Panyushkin, V. T.—200  
 Patrysheva, E. N.—683  
 Pavlova-Verevskina, A. I.—217  
 Pavlovskaya, G. R.—407, 457, 465  
 Peretrukhin, V. F.—813, 816, 823  
 Petrov, D. V.—808  
 Petrzhak, G. I.—386  
 Pirozhkov, S. V.—16, 195  
 Ponomareva, S. I.—465  
 Popkov, G. P.—683  
 Popov, D. K.—59, 382  
 Popovich, V. B.—644  
 Pospelov, Yu. N.—527  
 Posvol'skii, M. V.—699, 882  
 Potapova, A. I.—214  
 Pozharskaya, M. E.—131, 411  
 Prokhorov, V. M.—522  
 Prokhorova, N. P.—41  
 Prokin, E. S.—247  
 Prokopchuk, Yu. Z.—34, 41  
 Prokoshin, A. D.—632  
 Pronin, V. A.—204  
 Pukhova, L. G.—778  
 Pushkarev, V. V.—114, 269, 531  
 Pushlenkov, M. F.—252  
 Pustovalov, N. N.—114, 531  
 Puzako, V. D.—552

## R

Rachinskii, V. V.—5, 10, 148

Rauzen, F. V.—99  
 Renard, É. V.—28  
 Rengevich, V. B.—407, 457, 462, 465  
 Rimskii-Korsakov, A. A.—560  
 Rogozina, E. M.—59, 382  
 Rovinskii, F. Ya.—273, 277, 280  
 Rozen, A. M.—22, 120, 123, 675  
 Rubinshtein, R. N.—739  
 Rudenko, N. P.—260, 352  
 Ruzankin, V. I.—746  
 Ryazanov, M. A.—164  
 Rybakov, K. A.—131, 390, 411, 433, 571  
 Rybakov, V. N.—104  
 Rykov, A. G.—356, 495, 543, 545, 548, 561, 583, 729, 782, 786, 793

## S

Sadovnikova, G. I.—229  
 Samartseva, A. G.—158  
 Saprykina, E. I.—422  
 Semenov, D. I.—552  
 Serezhkin, V. N.—285  
 Sergeev, G. M.—62, 767, 771  
 Sergievskii, V. V.—438  
 Sevast'yanov, Yu. G.—260, 555  
 Shafiev, A. I.—263  
 Shalaeviskii, M. R.—709  
 Shamaev, V. I.—133  
 Shatalov, V. V.—808  
 Shchegolev, V. A.—709  
 Shchepetil'nikov, N. N.—252  
 Shepelev, A. D.—575  
 Shesterikov, V. N.—126  
 Shevelev, G. V.—200  
 Shevtsev, P. P.—442  
 Shilov, V. P.—813  
 Shiryaeva, L. V.—361  
 Shmidt, V. S.—126, 131, 250, 390, 411, 433, 571  
 Shpunt, L. B.—48  
 Shversov, I. K.—693, 722  
 Sibrina, G. F.—409  
 Sidorov, G. V.—898  
 Simakin, G. A.—96, 495, 832, 838  
 Simonyak, Z. N.—527  
 Sinitsyn, N. N.—575

Sinotova, E. N.—289, 557  
 Sklenskaya, E. V.—500  
 Skoblo, A. I.—504, 510, 522  
 Sles', V. G.—504  
 Smelov, V. S.—425, 429  
 Smirnov, N. N.—329  
 Smirnov, V. A.—233  
 Smirnov, V. Yu.—808  
 Smirnova, N. M.—229  
 Solntsev, V. M.—735  
 Solov'eva, Z. Ya.—99  
 Sotnikov, V. S.—890  
 Spitsyn, V. I.—316, 650  
 Spivakov, B. Ya.—689  
 Startseva, E. A.—204  
 Strelkov, L. A.—182  
 Subbotin, A. A.—416  
 Sudakov, S.—735  
 Suglobov, D. N.—504, 510, 522, 704  
 Suglobova, I. G.—53, 56, 168, 364, 369, 863  
 Sukhotin, L. N.—136  
 Surikov, V. V.—316  
 Sycheva, M. D.—273, 277, 280  
 Syskov, E. A.—324

## T

Tarasov, V. A.—895  
 Tarasov, V. V.—117  
 Teterin, E. G.—123, 390  
 Tetervin, G. K.—233  
 Tikhonov, M. F.—83, 190  
 Travkin, V. F.—575  
 Trofimov, A. M.—233  
 Trunov, V. K.—285  
 Tsibanov, V. V.—640  
 Tsvetkova, Z. N.—126  
 Tsvigunov, A. N.—859

## U

Ukraintseva, E. A.—200  
 Urazaeva, N.—886  
 Usachenko, V. S.—886  
 Ustinov, O. A.—632

## V

Varshal, G. M.—173  
 Vasil'ev, V. Ya.—583

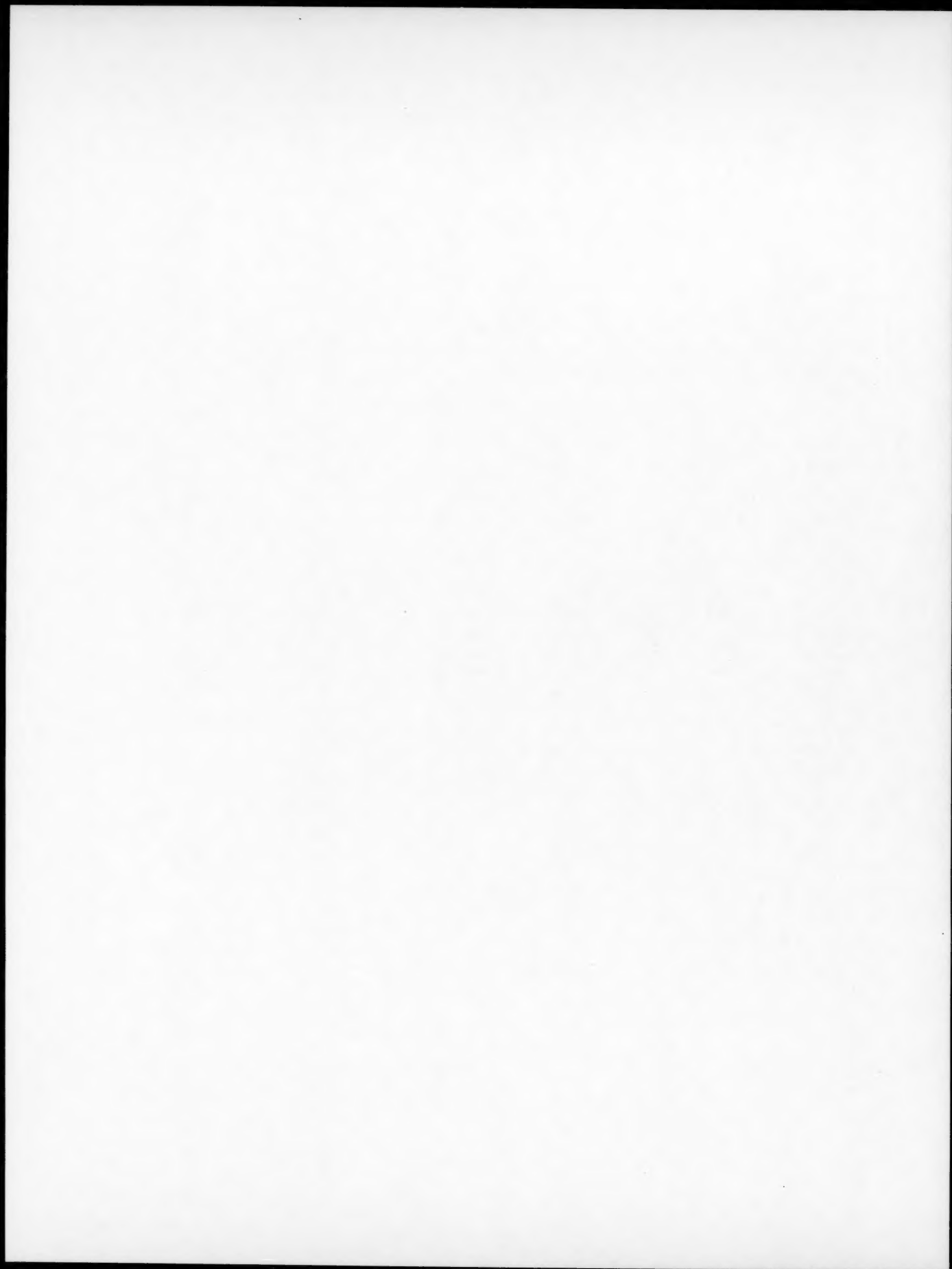
Vdovenko, V. M.—53, 56, 168, 364, 369, 704, 863  
 Velyukhanova, T. K.—173  
 Vereshchagin, Yu. I.—693  
 Visyashcheva, G. I.—832, 838, 842, 846  
 Vitkovskaya, A. A.—229  
 Vladimirova, N. A.—96  
 Vodovator, V. A.—704  
 Voikov, A. A.—364, 618  
 Volkov, Yu. F.—832, 838, 842, 846  
 Volkova, N. L.—644  
 Volzhinskii, A. I.—329  
 Vorob'eva, A. I.—204  
 Votsilka, I.—333, 339, 345, 871  
 Vyatkiha, I. I.—803

## Y

Yagodin, G. A.—117  
 Yakovlev, G. N.—252, 683, 832, 838, 842, 846  
 Yasnovitskaya, A. L.—252  
 Yatsenko, N. A.—635  
 Yushkan, E. I.—273, 277, 280  
 Yussonnua, M.—709  
 Yuzhina, A. D.—229

## Z

Zaborenko, K. B.—601, 607, 614, 640  
 Zaborskaya, E. Yu.—739  
 Zaitsev, A. A.—62, 758  
 Zaitseva, N. G.—333, 339, 345, 871, 877  
 Zakharkin, B. S.—442  
 Zakharova, F. A.—538  
 Zakrevskaya, T. M.—750, 755  
 Zarubin, A. I.—407, 623, 626  
 Zelentsov, S. S.—386, 470, 475  
 Zharkova, A. S.—775, 778  
 Zhukova, L. A.—5, 10, 148  
 Zhuravleva, G. I.—67, 73  
 Zhuravleva, Z. A.—158  
 Zhurenkov, E. M.—597  
 Zolotarev, A. B.—630  
 Zolotavin, V. L.—418  
 Zolotov, Yu. A.—689, 886  
 Zvara, I.—709  
 Zvarova, T. S.—709



SOVIET RADIOCHEMISTRY  
Volume 16, Numbers 1-6, 1974

(A translation of Radiokhimiya)

Volume 16, Number 1      January-February, 1974

	Engl./Russ.
Classification of Coprecipitation Phenomena – I. V. Melikhov and S. S. Berdonosov. .	1    3
Distribution of Traces of $^{82}\text{Br}$ in the System Crystalline Iodine–Vapor. I. Determination of Equilibrium CocrySTALLIZATION Coefficient	
– V. M. Komarevskii, S. S. Berdonosov, and I. V. Melikhov. . . . .	11    14
Radiocolloids in Sorption Systems. XI. Nature of Maximum on $\bar{\epsilon}$ -pH Isotherm. Relation of Sorption and Colloidal Properties of a Radioisotope in the Formation of True Colloids – N. D. Betenekov, Yu. V. Egorov, and V. D. Puzako . . . . .	17    20
Hydroxide Collectors in Radiochemistry. VII. Reduction Products of Lithium and Cesium Permanganates – A. S. Lyubimov and Yu. V. Egorov . . . . .	23    27
Reaction of Americium (III) with Oxalate Ions during Adsorption on Barium Oxalate – D. N. Bykhovskii and I. K. Petrova . . . . .	27    31
Separation of Actinides and Lanthanides on Zirconium Phosphate. V. Isolation of Berkelium – A. I. Shafiev, Yu. V. Efremov, and G. N. Yakovlev . . . . .	31    34
Effect of Concentration of Radioactive Isotope on the Absorption on Strontium-90 by K-Askangel – A. A. Kalandiya . . . . .	35    39
Efficiency of Deactivation of Drinking Water from Certain Fission Products by K-Askangel – A. A. Kalandiya . . . . .	40    44
Separation of Rubidium and Cesium on Zirconyl Phosphate Sintered with Polytetrafluoroethylene – L. N. Moskvina, V. S. Miroshnikov, V. A. Mel'nikov, and G. K. Slutskii. . . . .	45    50
Isolation of Radioactive Cesium on Ammonium Phosphomolybdate with Polytetrafluoroethylene as Binder – L. N. Moskvina and V. A. Mel'nikov. . . . .	49    53
Ion-Exchange Behavior of Polonium in Acid Solutions – N. N. Ampel'gova. . . . .	52    56
Complex Compounds of Pentavalent Americium in Solutions of Ethylenediaminetetraacetic and Diethylenetriaminepentaacetic Acids – V. B. Nikolaevskii, V. P. Shilov, and N. N. Krot. . . . .	57    61
Reaction of Neutral Complexes of Uranyl with Stannic Chloride – V. M. Vdovenko, T. V. Kovaleva, N. A. Kanevskaya, and D. N. Suglov . . . . .	62    66
Study of Some Cyanide Complexes of Cobalt and Iron by GR Emission Spectroscopy – V. E. Prusakov, R. A. Stukan, B. V. Borshchagovskii, and V. I. Gol'danskii. . . . .	65    70
Topochemical Preparation of Thorium Hydroxide – V. V. Sakharov, T. I. Danilevich, V. M. Klyuchnikov, G. N. Voronskaya, and S. S. Korovin. . . . .	70    74
Spectrophotometric Study of Kinetics of Oxidation of $\text{UCl}_4$ by Oxygen in a Molten $\text{LiCl-KCl}$ Eutectic – V. V. Gushchin, T. I. Sabanova, V. A. Ermakov, O. V. Skiba, G. N. Kazantsev, and V. M. Barinov. . . . .	76    80
Kinetics of Reduction of Plutonium by Hydrazine. II. Reduction of $\text{Pu}^{(\text{IV})}$ – V. S. Koltunov and G. I. Zhuravleva. . . . .	80    84
Standard Enthalpies of Formation of Alkali Metal and Ammonium Pentafluorodiuranylates – Yu. L. Saponitskii, V. I. Seleznev, Z. B. Mukhametshina, V. G. Bodrov, M. Kh. Karapet'yants, and B. N. Sudarikov. . . . .	84    88



Reaction of Zirconium with Polysilicic Acids in Aqueous Solutions – B. P. Nikol'skii, V. I. Andreev, R. I. Lyubtsev, and M. S. Polyakov . . . . .	88	92
Electrochemical Investigation of Rare-Earth Metal Amalgams. II. Solubility of Cerium, Praseodymium, and Neodymium in Mercury – K. A. Usenova, G. V. Osipova, Sh. D. Krebaeva, and R. Sh. Enikeev . . . . .	95	99
Electrochemical Investigation of Rare-Earth Metal Amalgams. III. Solubility of Samarium, Ytterbium, and Europium in Mercury – K. A. Usenova, Sh. D. Krebaeva, G. V. Osipova, and R. Sh. Enikeev . . . . .	100	104
BRIEF COMMUNICATIONS		
Method of Layer by Layer Dissolution of Isomorphous Crystals – M. I. Ermolaev and G. V. Levchenko . . . . .	104	109
Study of the Distribution of a Microimpurity in Isomorphous Systems with a Distribution Constant Close to 1 by Layer by Layer Dissolution – M. I. Ermolaev and G. V. Levchenko . . . . .	107	111
Effect of Impurities on the Kinetics of Crystallization and Dissolution of Thorium Oxalate – D. N. Bykhovskii and I. K. Petrova . . . . .	110	114
Sorption of Uranium from Seawater on Titania Gel – A. I. Ryabinin, G. A. Doroshenko, and E. A. Lazareva . . . . .	113	116
Extraction Power of Sulfoxides. IX. Basicity of Sulfoxides, Their Extraction Properties, and Position in the Series of Organic Oxides – A. M. Rozen, Yu. I. Murinov, Yu. E. Nikitin, and V. S. Pilyugin . . . . .	115	118
Compounds of Uranooxalic and Thorooxalic Acids with Benzylquinolinium – G. I. Petrzhak, A. F. V'yugina, and L. V. Karago . . . . .	118	120
Estimation of Oxidation Potential of Americium (VI) in an Alkaline Medium – V. B. Nikolaevskii, V. P. Shilov, and N. N. Krot . . . . .	120	122
Enthalpy and Heat Capacity of Neptunium Dioxide in the Temperature Range of 350–1100°K – V. A. Arkhipov, É. A. Gutina, V. N. Dobretsov, and V. A. Ustinov . . . . .	122	123
Effect of the Degree of Dispersity on the Character of the Thermal Behavior of $\epsilon$ - $\text{UO}_3$ – I. I. Kozhina, V. A. Bykov, and G. V. Malinin . . . . .	125	126
Radiochemical Purification of Iron-55 by an Electrochemical Method – L. D. Danilin and A. I. Pavlova-Verevskina . . . . .	127	128
Possibility of Using Sulfonated Polyethylene and Polyvinyl Alcohol Films for Preparing Sources Based on $^{55}\text{Fe}$ – L. D. Danilin and A. I. Pavlova-Verevskina . . . . .	130	130
Formation of Labeled Phenylthiohydantoin Derivatives (PTH) of Amino Acids by Reactions of Accelerated Tritium Atoms with Energies of 0.4–0.5 keV – L. A. Baratova, B. G. Dzantiev, O. S. Shimchuk, and A. V. Shishkov . . . . .	132	131
LETTERS TO THE EDITOR		
On the Article "Isolation of Microamounts of Radioactive Isotopes from Waste Waters of Low Activity by a Freezing Method" – M. F. Yakushev . . . . .	135	134
Reply to M. F. Yakushev's Letter – V. L. Zolotavin . . . . .	136	135
Reply to V. L. Zolotavin's Letter – M. F. Yakushev . . . . .	137	135

## Volume 16, Number 2

March-April, 1974

The Editorial Board of the Journal "Radiokhimiya" Dedicates This Issue to the 250th Anniversary of the Academy of Sciences of the USSR . . . . .	139	137
The Position of the Actinides in the Periodic Table – V. K. Grigorovich . . . . .	140	138
Sorption of Some Radioelements by the Inorganic Sorbent Tin (IV) Phosphate. III. Sorption of Niobium (V) from Nitric Acid Solutions – V. N. Krylov, V. G. Pitalev, and A. A. Pospelov . . . . .	149	148
Isolation of Transplutonium Elements on Anionites by Means of Aqueous Alcohol Solutions of Nitric Acid and Ammonium Thiocyanate – L. I. Guseva and G. S. Tikhomirova . . . . .	153	152



Sorption of $^{239}\text{Pu}$ , $^{106}\text{Ru}$ , and $^{99}\text{Tc}$ by Bottom Sediments of the Pacific Ocean — V. V. Gromov and V. I. Spitsyn .....	157 157
Sorption of Ions of Some Polyvalent Actinide and Rare-Earth Elements by a Cationite with a Phthalic Functional Group — B. P. Nikol'skii, L. I. Krylov, and B. B. Zakhvataev .....	163 162
Rate of Extraction of $\text{Pu}^{(\text{IV})}$ from Nitric Acid Solution by Tributyl Phosphate — V. V. Fomin and G. A. Leman .....	167 166
Extraction by Organophosphorus Acids. I. Effect of Composition and Structure of Phosphonic Esters on the Extraction of Trivalent Cations of Transplutonium and Rare-Earth Elements — A. A. Zaitsev, I. I. Nazarova, I. V. Petukhova, V. T. Filimonov, and G. N. Yakovlev .....	177 176
Extraction of Cesium and Rubidium with a Binary Mixture of Di-2-ethylhexyl- phosphonic Acid and 2-Phenylphenol — V. S. Smelov and V. P. Lanin .....	181 180
Dissociation and Protonization of 2-Ethylhexyl Ester of Phenylphosphonic Acid — N. A. Adaikin, E. S. Barketov, and A. A. Zaitsev .....	187 186
Oxidation—Reduction Reactions of Actinide Elements. XXV. Kinetics of Neptunium (IV) —Americium (V). Reaction in Perchlorate Solutions — N. B. Blokhin, V. A. Ermakov, and A. G. Rykov .....	191 189
Reduction of Neptunium and Iron by Thiourea Dioxide — M. P. Mefod'eva .....	194 193
Oxidation of Plutonium (III) by Persulfate Ions — V. P. Shilov, A. I. Milovanov, and N. N. Krot .....	197 196
IR Spectroscopic Investigation of Some Complex Compounds of Uranium (IV) and Thorium — G. I. Petrzhak and S. S. Zelentsov .....	201 200
Complex Formation in the Systems Uranium Halide—Alkali Metal Halide Energetics of Alkali Metal Hexabromouranates (IV) — V. M. Vdovenko, I. G. Suglobova, and D. É. Chirkst. ....	205 203
Thermal Stability of Uranium (IV) Oxalate Hexahydrate — A. I. Zhiron, K. M. Dunaeva, and R. R. Khudyakova .....	210 208
Thermal Stability of Uranyl Oxalate — A. I. Zhiron, K. M. Dunaeva, R. V. Khudyakova, and E. A. Ippolitova .....	214 213
Hydrolysis of Transuranium Elements. IV. Sorption Homogeneity of Microamounts of Americium (III) — Yu. S. Korotkin .....	218 217
Hydrolysis of Transuranium Elements. V. Hydrolysis of Americium and Curium in Perchloric Acid Solutions — Yu. S. Korotkin .....	223 221
Electrochemical Method of Isolating Plutonium from a Peroxide—Alkali Medium — A. M. Gurevich, N. P. Osicheva, and L. F. Solntseva .....	227 226
Separation of Multicomponent Systems Based on Rare-Earth Elements by the Electrofocussing Method — V. P. Shvedov and V. N. Ivanov .....	230 229
Structure of the High Temperature Modification of $\alpha\text{-UMo}_2\text{O}_8$ — V. N. Serezhkin, L. M. Kovba, and V. K. Trunov .....	233 231
Investigation of the Uranium—Oxygen System under Nonhydrostatic Stress Conditions — A. N. Tsvigunov, L. M. Kovba, E. V. Zubova, V. V. Savranskii, and N. I. Komarevtseva .....	237 235
Ionic Flotation of Radioactive Microcomponents — N. N. Pustovalov and V. V. Pushkarev .....	242 240
Effect of Added Electrolytes on Ionic Flotation of Radioactive Microcomponents — N. N. Pustovalov and V. V. Pushkarev .....	245 243
Nondestructive Determination of Microamounts of Uranium and Thorium in Materials of Complex Chemical Composition — Zh. Ganzorig, L. Dashzévég, O. Otgonsurén, G. Khuukhénkhui, I. Chadrabai, and D. Chultém .....	249 247
Deactivation of Surfaces by Solutions in the Absence and in the Presence of a Sorbent — V. N. Shchebetkovskii and A. A. Bochkov .....	254 254
<b>BRIEF COMMUNICATIONS</b>	
Coprecipitation of Radon Fluoride with Some Compounds of Xenon — V. V. Avrorin, V. D. Nefedov, and M. A. Toropova .....	260 261

Adsorption of $\text{SO}_4^{2-}$ Ion on Barium Sulfate — V. I. Grebenshchikova, A. S. Pershin, and K. N. Chaliyan. . . . .	262	262
Effect of Different Forms of Silicic Acid on Sorption Behavior of Protactinium — L. D. Sheidina. . . . .	265	265
Extraction from Hydrochloric Acid Solutions with Tributyl Phosphate. VIII. Extraction of Molybdenum from HCl Solutions — V. I. Levin and T. D. Titkova. . . . .	267	267
Extraction of Rhodium (III) from Nitrate Solutions — K. P. Lunichkina and E. V. Renard. . . . .	269	268
Effect of Hydration on Activity of Tri-n-Butyl Phosphate in Benzene — V. V. Sergievskii, A. P. Zuev, Nguen Suan Ngok, and Yu. G. Frolov. . . . .	272	270
Ionization Constants of Some Organophosphorus Acids — N. N. Guseva, É. V. Sklenskaya, M. Kh. Karapet'yants, and A. I. Mikhailichenko. . . . .	275	273
Effect of Hydration on the Activity of Salts of Unsymmetrical Tertiary Amines — V. V. Sergievskii and Yu. G. Frolov. . . . .	278	275
Reduction of Uranyl Ion in Nonaqueous Media — Yu. I. Belyaev, A. I. Skoblo, and D. N. Suglov. . . . .	281	278
Effective Magnetic Moments of Neptunium Ions in Solutions — V. A. Shcherbakov, A. A. Chaikhorskii, and E. V. Iorga. . . . .	283	279
Investigation of Hydration of Neptunyl by NMR Spectroscopy — V. A. Shcherbakov, E. V. Iorga, and L. G. Mashirov. . . . .	286	281
Express Analysis of Mixtures of Radioactive Gases and Vapors in the Study of Dehydration Processes of Hydroxides — V. V. Teplyakov, I. N. Bekman, and K. B. Zaborenko. . . . .	288	283
Radiochemical Separation of Indium and Tin — E. S. Gureev, V. S. Usachenko, and G. A. Brodskaya. . . . .	291	286

## Volume 16, Number 3

May-June, 1974

Liquid Phase Kinetic Conditions of Coprecipitation of Micro Impurities — I. V. Melikhov. . . . .	295	289
Effect of Collisions of Crystals in a Stirred Suspension on the Transfer of Microamounts of Rubidium into KCl Crystals — I. V. Melikhov, D. G. Berdonosova, and B. G. Pakhomov. . . . .	302	297
Migration Conditions of Coprecipitation in the Growth of Carrier Crystals — I. V. Melikhov. . . . .	305	300
Sorption of Americium in Different Oxidation States by Iron and Zirconium Hydroxides — L. K. Goncharova, B. F. Myasoedov, and A. I. Novikov. . . . .	312	308
Study of the State of Plutonium and Ruthenium in Sea Water by Ultrafiltration Method — V. V. Gromov, V. I. Spitsyn, and V. V. Surikov. . . . .	316	312
Sorption Behavior of Americium from Ammonium Acetate Solutions on Anion Exchange Resins — B. N. Laskorin, G. V. Khalturin, and V. A. Borovinskii. . . . .	320	316
Ion Exchange in $\text{UO}_2\text{F}_2\text{—HF(NH}_4\text{F·HF, NH}_4\text{F)—H}_2\text{O}$ Solutions on KU-2 Cationite in Sorption and Desorption Processes — V. S. Pakholkov, V. P. Ganyaev, and E. A. Syskov. . . . .	324	320
Study of Kinetics of $\text{Zn}^{2+}\text{—H}^+$ and $\text{Ba}^{2+}\text{—H}^+$ Ion Exchange on KU-2 Cationite in the Internal Diffusion Region by $\gamma$ -Radiometry — V. V. Illarionov, R. L. Kadis, A. P. Musakin, A. I. Volzhinskii, and N. N. Smirnov. . . . .	329	325
Fast Gas Thermochromatographic Methods of Isolating Radioactive Elements. II. Gold — Universal Target for Express Production of Radioactive Preparations of Rhenium, Osmium, Iridium, and Mercury — B. Bayar, I. Votsilka, N. G. Zaitseva, and A. F. Novgorodov. . . . .	333	329
Fast Gas Thermochromatographic Methods of Isolating Radioactive Elements. III. Formation and Thermochromatographic Behavior of Ultramicroamounts of Volatile Oxides and the Hydroxide of Tungsten — B. Bayar, I. Votsilka, N. G. Zaitseva, and A. F. Novgorodov. . . . .	339	336

Fast Gas Thermochromatographic Methods of Isolating Radioactive Elements. IV. Isolation of Neutron-Deficient Isotopes of Zirconium and Niobium from a Silver Chloride Melt — B. Bayar, I. Votsilka, N. G. Zaitseva, and A. F. Novgorodov	345	343
Extraction of Ruthenium with Diantipyrilpropylmethane — A. I. Kolmakova, V. O. Kordyukovich, and N. P. Rudenko	352	351
Oxidation-Reduction Reactions of Actinide Elements. XXVII. Kinetics of Uranium (IV)—Neptunium (V) Reaction in Perchlorate Solutions — N. B. Blokhin, V. A. Ermakov, and A. G. Rykov	356	355
Phase Diagram of Uranium—Oxygen in the Region of Compositions from $UO_{2.25}$ to $UO_{2.67}$ — I. I. Kozhina and L. V. Shiryayeva	361	360
Complex Formation in the Systems Uranium Halide—Alkali Metal Halide Enthalpy of Formation of Alkali Metal Chlorouranates (IV) — V. M. Vdovenko, V. A. Volkov, and I. G. Suglobova	364	363
Forms of Compounds and Their Relative Stability in the Systems Uranium Tribromide—Alkali Metal Bromide — V. M. Vdovenko, I. I. Kozhina, I. G. Suglobova, and D. E. Chirkst	369	369
Preparation of Cyclotron Targets from Transplutonium and Rare-Earth Elements by Electrodeposition from Isobutanol — Yu. S. Korotkin	376	377
Study of the Interaction of Americium with Amino Acids — E. M. Rogozina, L. F. Konkina, and D. K. Popov	382	383
A Compound of Tetravalent Uranium with Diethylenetriaminepentaacetic Acid — G. I. Petrzhak, G. S. Lozhkina, and S. S. Zelentsov	386	386
Investigation of Thorium Hydroxoacetates. I. Isolation of Thorium Hydroxoacetates from Nitric-Acetic Acid Solutions by Neutralization with Ammonia — V. S. Shmidt, V. G. Andryushin, K. A. Rybakov, and E. G. Teterin	390	391
Vapor Tension of Polonium and Lead Polonide — A. S. Abakumov and Z. V. Ershova	396	397
Vapor Tension and Thermal Dissociation of Polonium Dioxide — A. S. Abakumov and Z. V. Ershova	400	401
Ion Radicals in Crystals of Celestine — V. V. Gromov, L. N. Ivanov, and T. Kwan	403	404
BRIEF COMMUNICATIONS		
Heat of Solution of Anhydrous Uranyl Nitrate in Water and Certain Organic Solvents — E. A. Kanevskii, A. I. Zarubin, V. B. Rengevich, and G. R. Pavlovskaya	407	410
Thermal Stability of the Tetrahydrate of Disubstituted Thorium Arsenate — N. G. Chernorukov, G. F. Sibrina, and E. P. Moskvichev	409	412
Investigation of Thorium Hydroxoacetates. II. Thermal Decomposition — V. G. Andryushin, P. B. Kozhevnikov, M. E. Pozharskaya, K. A. Rybakov, and V. S. Shmidt	411	413
Chromatographic Isolation of Compounds of Heptavalent Bromine-82 — I. S. Kirin, V. V. Gavrilov, and V. K. Isupov	414	416
Intermediate Fragments in the Reactions of Recoil Atoms of Phosphorus-32 in Mixtures of $CCl_4-CH_3I$ — N. I. Gabov and A. A. Subbotin	416	418
LETTERS TO THE EDITOR		
Answer to the Second Remark of M. F. Yakushev — V. L. Zolotavin	418	421

## Volume 16, Number 4 July-August, 1974

Relation of CocrySTALLIZATION of Isomorphous Impurities from Supersaturated Solutions to the Thermodynamic Properties of the Solid Phase — G. I. Gorshtein	419	425
Effect of Temperature on Extraction of Alkali and Alkaline Earth Elements by D2EHPA — V. S. Smelov and V. P. Lanin	425	432
Reaction of High-Molecular Ortho-Substituted Phenols with Alkali Metals — V. P. Lanin and V. S. Smelov	429	436
Possibility of Predicting Extraction of Various Monobasic Acids from Aqueous Solutions by Nucleophilic Extractants — V. S. Shmidt and K. A. Rybakov	433	440

Effect of Hydration of a Component of the Organic Phase on the Extraction Equilibrium — Yu. G. Frolov and V. V. Sergievskii. . . . .	438	445
Physicochemical and Extraction Properties of TBP—Tetrachloroethylene Systems — B. S. Zakharkin, B. V. Nikipelov, E. I. Saprykina, and P. P. Shevtsev. . . . .	442	449
Extraction of Silver (I) Using Bis(4-Ethyl-3,5-Dipropyl-1-Pyrazolyl) Methane. I. Extraction from Hydrochloric Acid Solutions — I. N. Kremenskaya, N. K. Evseeva, V. M. Dziomko, O. V. Ivanov, and G. A. Kumaneva. . . . .	447	455
Extraction of Silver (I) Using Bis(4-Ethyl-3,5-Dipropyl-1-Pyrazolyl)Methane II. Extraction from Solutions of Alkali Metal Chlorides, Bromides, Iodides, and Thiocyanates — I. N. Kremenskaya, N. K. Evseeva, V. M. Dziomko, O. V. Ivanov, and G. A. Kumaneva. . . . .	452	460
Aqueous Alcohol Solutions of Uranyl Nitrate. I. Polarographic Investigation of Aqueous Ethanol Solutions — E. A. Kanevskii, G. R. Pavlovskaya, and V. B. Rengevich. . . . .	457	464
Aqueous Alcohol Solutions of Uranyl Nitrate. II. Polarographic Investigation of Aqueous Methanol Solutions — E. A. Kanevskii, G. R. Pavlovskaya, and V. B. Rengevich. . . . .	462	469
Aqueous Alcohol Solutions of Uranyl Nitrate. III. Spectrophotometric Investigation of Aqueous Methanol Solutions with a Low Water Content — E. A. Kanevskii, G. R. Pavlovskaya, V. B. Rengevich, and S. I. Ponomareva. . . . .	465	472
Reaction of Uranyl Nitrate and Sulfate with $\gamma$ -Butyrolactone — L. E. Nikol'skaya and S. S. Zelentsov. . . . .	470	476
Reaction of Uranyl Halides with $\gamma$ -Butyrolactone — L. E. Nikol'skaya and S. S. Zelentsov. . . . .	475	481
Kinetics of the Reaction of Plutonium Ions with Tetravalent Uranium in Nitric Acid Solution. I. Reduction of Pu(IV) — V. I. Marchenko and V. S. Koltunov. . . . .	479	486
Kinetics of the Reaction of Plutonium Ions with Tetravalent Uranium in Nitric Acid Solution. II. Reduction of Pu(VI) to Pu(V) — V. I. Marchenko and V. S. Koltunov. . . . .	485	492
Kinetics of the Reaction of Plutonium Ions with Tetravalent Uranium in Nitric Acid Solution. III. Reduction of Pu(V) — V. I. Marchenko and V. S. Koltunov. . . . .	489	496
Effect of Nitrate Ions, the Nature of the "Neutral" Cations, and Temperature on the Potential of the Plutonium (IV)—Plutonium (III) Couple — G. A. Simakin, A. G. Rykov, and P. F. Baklanova. . . . .	495	502
Relation of the Stability of Complexes of Rare Earth Elements and Thorium with Organophosphorus Acids to the Structure of these Acids — N. N. Guseva, M. Kh. Karapet'yants, A. I. Mikhailichenko, and É. V. Sklenskaya. . . . .	500	508
Complexes of Uranyl with Anions of Salts of Unstable Acids — V. G. Sles', A. I. Skoblo, and D. N. Suglobov. . . . .	504	512
Trifluoromethylsulfonate Complexes of Uranyl — A. I. Skoblo and D. N. Suglobov. . . . .	510	518
Spectra of Uranyl Compounds in the Visible Region — A. I. Skoblo and D. N. Suglobov. . . . .	522	522
Thermal Springs and Superheavy Elements — Yu. T. Chuburkov and L. M. Lebedev. . . . .	517	524
Estimation of the Rate of Extraction of Radionuclides from Fused Mineral Particles — V. M. Prokhorov and S. V. Kovenya. . . . .	522	529
Method for Simultaneous Determination of the Isotopes $^{230}\text{Th}$ , $^{232}\text{Th}$ , $^{231}\text{Pa}$ , $^{238}\text{U}$ , and $^{226}\text{Ra}$ in One Sample of Sedimentary Materials — Yu. V. Kuznetsov, V. K. Legin, Z. N. Simonyak, A. N. Elizarova, Yu. N. Pospelov, and É. I. Al'terman. . . . .	527	535
Foam Flotation of Clay Sorbents as a Deactivation Method — V. E. Fominykh, V. V. Pushkarev, and N. N. Pustovalov. . . . .	531	539
Preparation of Carrier-Free Radioisotopes $^{195}\text{Au}$ and $^{199}\text{Au}$ and Their Use in Analysis — E. S. Gureev, T. Islamov, and B. A. Lunger. . . . .	535	543
BRIEF COMMUNICATIONS		
Sorption of Heptavalent Neptunium on Some Metal Hydroxides — F. A. Zakharova, M. M. Orlova, D. P. Alekseeva, and N. N. Krot. . . . .	538	546
Oxidation of Uranium Dioxide — V. D. Chumachkova, É. G. Lavut, K. M. Dunaeva, and E. A. Ippolitova. . . . .	540	548



Oxidation-Reduction Reactions of Actinide Elements XXVI. Kinetics of the Reaction of Uranium (IV)-Americium (V) in Perchlorate Solutions - N. B. Blokhin, V. A. Ermakov, and A. G. Rykov. . . . .	543	551
Kinetics of the Reaction Neptunium (V)-Americium (V) in Sodium Carbonate Solutions - V. M. Chistyakov, V. A. Ermakov, and A. G. Rykov. . . . .	545	553
Spectrophotometric Study of the Reaction of Neptunium (V) Ions with Indium (III) Ions - A. A. Frolov and A. G. Rykov. . . . .	548	556
Effect of Temperature on the Reaction of Uranium with Alkali Metal Fluorides - I. N. Kashcheev and G. P. Novosellov. . . . .	550	557
State of Microamounts of Yttrium-91 in Aqueous Solutions Containing Albumin - N. V. Mikshevich, V. V. Kuptsova, D. I. Semenov, Yu. V. Egorov, and V. D. Puzako. . . . .	552	559
Preparation of Carrier-Free Bromine-77 - B. Z. Iofa and Yu. G. Sevast'yanov. . . . .	555	562
Synthesis of Isotopically Pure Methane C <sup>3</sup> H <sub>4</sub> - V. V. Leonov, E. N. Sinotova, and M. V. Korsakov. . . . .	557	564
BOOK REVIEWS		
E. Bujdosó (editor). Dosimetric Problems in the Radioisotope Contamination of the Organism Health Physics Problems of Internal Contamination - Reviewed by A. A. Rimskii-Korsakov. . . . .	560	567

## Volume 16, Number 5

September-October, 1974

Oxidation-Reduction Reactions of Actinides. XXVIII. Effect of Neutral Salts on the Rate of Neptunium (IV)-Iron (III) and Neptunium (V)-Iron (II) Reactions - A. G. Rykov and A. A. Frolov. . . . .	561	569
Extraction of some Actinides by Methyltriethylammonium (MTOA) Carbonate - N. A. Alekseeva, L. S. Bulyanitsa, and M. P. Koval'skaya. . . . .	566	575
Effect of Nature of Anions on Extraction of Uranium (VI) Salts Including these Anions - V. S. Shmidt and K. A. Rybakov. . . . .	571	580
Coordination Chemistry of Ruthenium in Extraction Processes with Organophosphorus Compounds. V. Extraction of Pentahalo Complexes of Nitrosoruthenium by Solutions of Salts of Quaternary Phosphonium Bases - N. N. Sinitsyn, V. F. Travkin, and A. D. Shepelev. . . . .	575	584
Extraction of Silver (I) using Bis(4-ethyl-3,5-dipropyl-1-pyrazolyl)-methane. III. Extraction from Sodium Nitrate and Nitric Acid Solutions - V. M. Dziomko, N. K. Evseeva, O. V. Ivanov, I. N. Kremenskaya, and G. A. Kumaneva. . . . .	579	588
Spectrophotometric Study of Complex Formation and Solvation of Actinide Ions. VIII. Forms of Existence of Uranium (IV) in Systems HNO <sub>3</sub> -Water-Nonelectrolyte - V. Ya. Vasil'ev, N. N. Andreichuk, and A. G. Rykov. . . . .	583	592
Ion Exchange Properties of Zeolite NaY Relative to Radioactive Rare Earth Elements - N. E. Brezhneva, Yu. I. Kapshninov, I. B. Popov, and V. V. Ivanov. . . . .	587	596
Study of Orthophosphate Complexes of Group III Elements by the Ion Exchange Method - L. N. Filatova and G. V. Galochkina. . . . .	591	601
Potentiometric and Spectrophotometric Determination of the Composition of Oxalatonioic Acids - T. S. Karantsevich, O. Kysel, and E. M. Zhurenkov. . . . .	597	608
Calculation of Degree of Liberation of Radioactive Gases from Solids and Determination of Diffusion Coefficients - O. A. Kapustin and K. B. Zaborenko. . . . .	601	611
Calculation of the Degree of Liberation of Radioactive Gases from Cylindrical Solids and Determination of the Diffusion Coefficients - O. A. Kapustin and K. B. Zaborenko. . . . .	607	618
Investigation of the Diffusion Mobility of <sup>220</sup> Rn in Thorium by the Emanation Method - K. B. Zaborenko, T. E. Os'kina, and N. A. Chernova. . . . .	614	625
State of Radioiodine in Methanol Solutions of Formic Acid - A. A. Volkov, E. S. Filatov, and An. N. Nesmeyanov. . . . .	618	629

## BRIEF COMMUNICATIONS

Effect of the Structure on the Extraction Power of Sulfoxides. I. Extraction of Nitric Acid — R. P. Fedoezzhina, E. P. Buchikhin, A. I. Zarubin, and E. A. Kanevskii .....	623	635
Effect of the Structure on the Extraction Power of Sulfoxides. II. Extraction of Uranyl Nitrate — R. P. Fedoezzhina, E. P. Buchikhin, A. I. Zarubin, and E. A. Kanevskii .....	626	638
Extraction of Microamounts of Plutonium from Fluorides by Aluminum — I. N. Kashcheev, G. P. Novoselov, and A. B. Zolotarev .....	630	641
Reaction of Uranium Dioxide and Uranosouranic Oxide with Sodium Molybdate — A. D. Prokoshin, O. A. Ustinov, M. A. Andrianov, N. T. Chebotarev, and V. M. Lukoyanov .....	632	643
Valence Forms of Uranium in Dissolution Processes of $\gamma$ -Irradiated Uranium Oxides in Sulfuric Acid — V. V. Gromov, D. Abdulaev, and N. A. Yatsenko .....	635	646
Monouranate in Cesium Diuranate — L. M. Kovba, I. A. Murav'eva, and A. S. Orlova .....	638	648
Use of the Emanation Method to Study Sintering of Thorium Metal — T. E. Os'kina, K. B. Zaborenko, and V. V. Tsibanov .....	640	650
An Yttrium-90 Generator — N. B. Mikheev, N. L. Volkova, and V. B. Popovich .....	644	653
Georgii Vasil'evich Gorshkov on His Seventieth Birthday .....	646	655
PROCEEDINGS OF SYMPOSIUM ON THE CHEMISTRY OF TRANSURANIUM ELEMENTS		
Reports of Soviet Scientists .....	648	657
The Valence of Actinides and Transactinides from the Point of View of D. I. Mendeleev's Periodic Law — V. I. Spitsyn .....	650	659
The Position of the Transuranium Elements in the Periodic System — An. N. Nesmeyanov .....	653	662
Prospects for the Preparation of Superheavy Nuclei in Fission Reactions — G. N. Flerov and Yu. Ts. Oganessian .....	657	666
Cocrystallization and Adsorption Methods in the Study of the Chemical Properties of Ultramicroamounts of Transuranium Elements — N. B. Mikheev .....	667	677
Some Rules of the Extraction of Actinide Elements — A. M. Rozen, Z. I. Nikolotova, N. A. Kartasheva, L. A. Mamaev, B. V. Martynov, and D. A. Denisov .....	675	686
Semiconductor-Current Extraction Methods of Separating Transplutonium Elements in the Trivalent State — G. V. Korpusov, G. I. Kuznetsov, E. N. Patrysheva, G. P. Popkov, and G. N. Yakovlev .....	683	695
Extraction of Transplutonium Elements by Mixtures of Reagents — M. K. Chmutova, B. F. Myasoedov, N. E. Kochetkova, B. Ya. Spivakov, and Yu. A. Zolotov .....	689	702
Extraction of Transplutonium Elements by some Organophosphorus Acids — Yu. I. Vereshchagin and I. K. Shvetsov .....	693	705
Acido Complex Salts in the Chemistry of Actinides — B. P. Nikol'skii, M. V. Posvol'skii, and G. S. Markov .....	699	711
Bond Strengths in $-yl$ Ions of Actinides(VI) — V. M. Vdovenko, V. A. Vodovatov, L. G. Mashirov, and D. N. Suglov .....	704	716
Gas Chromatography and Thermochromatography in the Study of Transuranium Elements — I. Zvara, V. Aikhler, V. Z. Belov, T. S. Zvarova, Yu. S. Korotkin, M. R. Shalaevskii, V. A. Shchegolev, and M. Yussonnua .....	709	720
Use of Higher Valence States in the Isolation and Determination of Americium and Berkelium — B. F. Myasoedov .....	716	728
Some Methods of Isolating Transplutonium Elements — V. N. Kosyakov, E. G. Chudinov, and I. K. Shvetsov .....	722	734
Thermodynamics of Cation-Cation Oxidation-Reduction Reactions of Uranium and Transuranium Elements — A. G. Rykov .....	729	741
Existence of Neptunosoneptun Oxide — Yu. I. Belyaev, V. M. Solntsev, I. I. Kapshukov, L. V. Sudakov, and V. M. Chistyakov .....	735	747



Selective Sorption of Strontium from Aqueous Solutions by Natural Clinoptilolite - V. A. Nikashina, E. Yu. Zaborskaya, E. M. Makhlov, and R. N. Rubinshtein .....	739	753
Investigation of the Behavior of Microelements in Ocean Water by the Desorption Method - V. V. Gromov. ....	742	757
Coprecipitation of Be, Al, V, Cr, Fe, Ni, Cu, W, and Re with Magnesium Hydroxide - A. I. Novikov and V. I. Ruzankin .....	746	761
Coprecipitation of Yttrium with Zirconium Hydroxide - A. I. Novikov and T. M. Zakrevskaya .....	750	764
Coprecipitation of Arsenic (V) and (III), Selenium (IV) and (VI), and Tellurium (IV) and (VI) with Zirconium Hydroxide - A. I. Novikov and T. M. Zakrevskaya .....	755	769
Complex Formation and Extraction Properties of Organophosphorus Compounds. II. Distribution of Extractant and Metals between Aqueous and Organic Phases - A. A. Elesin, V. A. Karaseva, N. A. Ivanovich, and A. A. Zaitsev .....	758	773
Products of the Reaction of Aqueous Solutions of Uranyl Nitrate with Aqueous Solutions of Weak Organic Bases - R. V. Lindval' and V. V. Kuznetsova .....	762	777
Complex Formation of Uranium (IV) in Solutions of Amino Acids - G. M. Sergeev and I. A. Korshunov .....	767	783
Synthesis and Some Properties of Complex Compounds of Thorium and Uranyl with Glycine and Aspartic and Glutamic Acids - G. M. Sergeev and I. A. Korshunov. .	771	787
Complex Formation of Rare Earths in Nitrate Melts. III. Study of Complex Formation of Neodymium and Praseodymium by Physicochemical Analysis - A. I. Kryukova, I. A. Korshunov, and A. S. Zharkova. ....	775	791
Complex Formation of Rare Earths in Nitrate Melts. IV. Cocrystallization of Microamounts of Rare Earths with Strontium Nitrate in Melts of $\text{KNO}_3$ and $\text{KNO}_3\text{-LiNO}_3$ - A. I. Kryukova, I. A. Korshunov, A. S. Zharkova, and L. G. Pukhova .....	778	794
Marcus Equation and Thermodynamics of Cation-Cation Oxidation-Reduction Reactions of Actinides - A. G. Rykov and N. B. Blokhin .....	782	799
Oxidation-Reduction Reactions of Actinides. XXIX. Kinetics of Neptunium (V)-Iron (II) Reaction in the Presence of Uranium (VI) and Indium (III) Ions - A. G. Rykov and A. A. Frolov .....	786	803
Kinetics of Oxidation of Americium (III) by Persulfate Ions in Solutions of Ammonium, Sodium, and Potassium Carbonates - V. M. Chistyakov, V. A. Ermakov, A. D. Mokrousov, and A. G. Rykov .....	793	810
Disproportionation of Neptunium (V) in Methanol - N. A. Aslanishvili, M. P. Mefod'eva, and N. N. Krot .....	799	817
Stability of Hexavalent Americium in Nitric Acid Solutions - B. F. Myasoedov, I. A. Lebedev, V. Ya. Frenkel', and I. I. Vyatkina .....	803	822
Search for Spontaneously Fissile Emitters in Thermal Brines from the Cheleken Peninsula - Yu. T. Chuburkov, O. D. Maslov, L. M. Lebedev, V. V. Shatalov, V. Yu. Smirnov, I. I. Chuburkova, D. V. Petrov, and A. I. Makedonskaya .....	808	827
Electrochemical Properties of Americium Hydroxides in an Aqueous Alkaline Medium - V. F. Peretrukhin, V. B. Nikolaevskii, and V. P. Shilov. ....	813	833
Polarographic Properties of Higher Oxidation States of Neptunium in Aqueous Alkaline Media - V. F. Peretrukhin and D. P. Alekseeva .....	816	836
Polarographic Properties of Higher Oxidation States of Plutonium in Aqueous Alkali Solutions - V. F. Peretrukhin and D. P. Alekseeva .....	823	843
Preparation of $\text{NpO}_3 \cdot 2\text{H}_2\text{O}$ - A. A. Chaikhorskii, M. Yu. Matuzenko, and Yu. I. Belyaev .....	829	850

Carbonate Compounds of Pentavalent Actinides with Alkali Metal Cations. I. Composition and Some Properties of Solid Carbonates of Pentavalent Neptunium with Potassium Obtained from $K_2CO_3$ Solutions - G. I. Visyashcheva, Yu. F. Volkov, G. A. Simakin, I. I. Kapshukov, A. S. Bevz, and G. N. Yakovlev .....	832	853
Carbonate Compounds of Pentavalent Actinides with Alkali Metal Cations. II. Preparation of Carbonate Compounds of $Np^{(V)}$ , $Pu^{(V)}$ , and $Am^{(V)}$ from $K_2CO_3$ Solution by Electrochemical Reduction of Hexavalent Ions - G. A. Simakin, Yu. F. Volkov, G. I. Visyashcheva, I. I. Kapshukov, P. F. Baklanova, and G. N. Yakovlev .....	838	859
Carbonate Compounds of Pentavalent Actinides with Alkali Metal Cations. III. X-ray Investigation of Neptunium (V), Plutonium (V), and Americium (V) Monocarbonates with Potassium - Yu. F. Volkov, I. I. Kapshukov, G. I. Visyashcheva, and G. N. Yakovlev .....	842	863
Carbonate Compounds of Pentavalent Actinides with Alkali Metal Cations. IV. X-ray Investigation of Dicarbonates of Neptunium (V), Plutonium (V), and Americium (V) with Potassium - Yu. F. Volkov, I. I. Kapshukov, G. I. Visyashcheva, and G. N. Yakovlev .....	846	868
State of $Pa^{(V)}$ Ions in Thiocyanate Solutions - V. V. Nekrasova, E. S. Pal'shin, and B. F. Myasoedov .....	851	873
Reaction of Polonium Vapor with Elements of Subgroup IVA - A. S. Abakumov and Z. V. Ershova .....	856	879
Polymorphism of $U_3O_8$ - A. N. Tsvigunov and L. M. Kuznetsov .....	859	882
Thermographic and X-ray Investigation of the Binary Systems $ThCl_4$ -LiCl and $ThCl_4$ -NaCl - V. M. Vdovenko, A. Ya. Garshanovich, and I. G. Suglobova ....	863	886
Nephelauxetic Effect in Solid and Molten Hexachloroamericite $Cs_2NaAmCl_6$ - Yu. A. Barbanel', V. P. Kotlin, and G. P. Chudnovskaya .....	867	889
Rapid Gas Thermochromatographic Methods of Isolating Radioactive Elements. V. Formation of Volatile Oxides and Hydroxide of Rhenium in the System Rhenium-Tungsten and Their Gas Thermochromatographic Behavior - B. Bayer, I. Votsilka, N. G. Zaitseva, and A. F. Novgorodov .....	871	894
Rapid Gas Thermochromatographic Methods of Isolating Radioactive Elements. VI. Isolation of Radioactive Isotopes of Thallium from Irradiated Lead Oxides - B. Bayer, N. G. Zaitseva, and A. F. Novgorodov .....	877	901
Solubility of Tetravalent Cerium Iodate - M. V. Posvol'skii, G. S. Markov, and F. P. Fedorov .....	882	906
Radiochemical Separation of Zinc and Gallium - G. A. Brodskaya, E. S. Gureev, V. S. Usachenko, N. Urzaeva, and Yu. A. Zolotov .....	886	909
Effect of Radiation from Metal Ions on Adsorption Properties of Semiconductor Materials - V. S. Sotnikov, P. N. Beletskii, V. G. Baru, V. V. Batasheva, and I. F. Antraptseva .....	890	913
Nature of Paramagnetic Centers in Hexagonal Boron Nitride - M. B. Khusidman ....	893	916
Post Effects of $\beta^-$ -Decay in Frozen Tellurium-Containing Solutions - N. E. Ablesimov, S. I. Bondarevskii, I. S. Kirin, and V. A. Tarasov .....	895	919
Isotopic Exchange of Hydrogen in Purines with Water - G. V. Sidorov and N. F. Myasoedov .....	898	922
INDEX		
Author Index, Volume 16, Numbers 1-6, 1974. ....	905	
Tables of Contents, Volume 16, Numbers 1-6, 1974. ....	909	

